DISTRIBUTED BY:
HAM IT UP!
THE W5YI GROUP, INC., DALLAS, TX

The W5YI Group, Inc.

Amateur Radio
Station Logbook for...
ham radio operators

Log Sheets and
Reference Materials

6538
1 FOR $3.95

Radio Amateur LOGBOOK

CONTAINS:

Authorized Amateur Radio Frequencies,
Call Sign Assignment System,
UTC Time Conversion Chart,
RST Reporting System,
DXCC, WAZ Lists
...and more!

Station: ____________________

Logbook No. ____________________

From: ____________________

To: ____________________

A Permanent Record of your Daily Operating Activities

Developed and Published by Master Publishing, Inc.
Content Contributions by Fred Maia, W5YI

The W5YI Group, Inc. • P.O. Box 565101 • Dallas, Texas 75356 • Tel. 817/461-6443

HOW TO USE YOUR STATION LOGBOOK

FILL IN THE FOLLOWING (Conditions that prevail unless logbook entries note differently):

STATION CALL SIGN: ____________________

STATION LOCATION: ____________________
ADDRESS

____
CITY STATE ZIP

OPERATOR: ____________________
SIGNATURE

Logbook Organization

This logbook is organized for ease of use and convenience. The reference text material at the front and back of the log sheets is printed horizontally so that there is easy access to the material as entries are made on the facing log sheets. The back of the log sheets are left blank for notes concerning the log sheet. References are provided for RST reporting system, UTC conversion chart, ITU Regions, call sign assignment system, Q-signals, CW abbreviations, emission designators, frequency classifications, third-party traffic, phonetic alphabet, DXCC and WAZ list, and authorized frequency bands.

Logbooks

Even though the FCC no longer requires that an amateur operator/station keep a detailed record of operation, it is recommended that radio amateurs keep a logbook of activities.

A logbook serves a number of purposes:

1. If there are any inquiries by the FCC, recorded entries of operation are available.
2. Logging radio contacts provides a historical record of your activities. Amateur logbooks should be kept for at least a year from the date of the last entry. Many radio amateurs keep them indefinitely as a permanent autobiographical record of pleasant memories.
3. It furnishes a journal of special activities, such as tests, state-of-the-art experiments and records participation in on-the-air events. Logbooks are particularly helpful if you wish to maintain progress toward attaining an operating award.
4. It documents station operation by another operator or for third-party traffic.

LOG SHEET ENTRIES:

DATE: Date of QSO
UTC TIME ON/OFF: When contact began, ended (see UTC chart below)
FREQ. (Frequency): Amateur band or exact frequency used
MODE: SSB, CW, FM, RTTY, AMTOR, TV, etc. [Type of emission]
PWR. (Power): Output power level in watts
STATION WORKED: Call sign of station contacted
LOCATION (QTH): City/State/ Country of station worked
SIGNAL REPORT: RST sent and received (see RST list below)
COMMENTS: Name of receiving operator, and notes.
QSL S/R: Record of QSL sent and received.

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL	
	TIME ON	TIME OFF						SENT	RCVD.		S	R

THE RST SIGNAL REPORTING SYSTEM

The RST system is a way of reporting on the quality of a received signal by using a three digit number. The first digit indicates *"Readability"* (R), the second digit indicates received *"Signal Strength"* (S) and the third digit indicates *"Tone"* (T). A fourth character is used on rare occasions to indicate the presence of a defectively keyed CW signal. For example, a signal report of 589 indicates a completely understood strong CW signal with an excellent note. On the other hand, an RST of 367C would be a difficult-to-copy, chirpy transmission. Most signal reports have an "R" of 4 or 5 and an "S" and "T" of 7 to 9.

READABILITY (R) Voice and CW
1 — Unreadable
2 — Barely readable, occasional words distinguishable
3 — Readable with considerable difficulty
4 — Readable with practically no difficulty
5 — Perfectly readable

SIGNAL STRENGTH (S) Voice and CW
1 — Faint signals, barely perceptible
2 — Very weak signals
3 — Weak signals
4 — Fair signals
5 — Fairly good signals
6 — Good signals
7 — Moderately strong signals
8 — Strong signals
9 — Extremely strong signals

TONE (T) Use on CW contacts only
1 — Extremely rough ac tone and very broad
2 — Very rough ac tone, very harsh and broad
3 — Rough ac tone, rectified but not filtered
4 — Rough note with some trace of filtering
5 — Filtered rectified ac, but strong ripple modulation
6 — Filtered tone with definite trace of ripple modulation
7 — Near pure tone, trace of ripple modulation
8 — Near perfect tone, slight trace of modulation
9 — Pure DC note with no trace of ripple or modulation of any kind

CHARACTERISTIC (Optional, CW only)
X — Very stable signal, the quality of crystal control (usually understood and hardly ever used!)
C — Chirpy keyed signal or frequency variation defect
K — Key click or noticeable make/break keying flaw

UNIVERSAL TIME TO LOCAL TIME CONVERSION CHART

UTC	AST/EDT	EST/CDT	CST/MDT	MST/PDT	PST
0000	2000	1900	1800	1700	1600
0100	2100	2000	1900	1800	1700
0200	2200	2100	2000	1900	1800
0300	2300	2200	2100	2000	1900
0400	0000	2300	2200	2100	2000
0500	0100	0000	2300	2200	2100
0600	0200	0100	0000	2300	2200
0700	0300	0200	0100	0000	2300
0800	0400	0300	0200	0100	0000
0900	0500	0400	0300	0200	0100
1000	0600	0500	0400	0300	0200
1100	0700	0600	0500	0400	0300
1200	0800	0700	0600	0500	0400
1300	0900	0800	0700	0600	0500
1400	1000	0900	0800	0700	0600
1500	1100	1000	0900	0800	0700
1600	1200	1100	1000	0900	0800
1700	1300	1200	1100	1000	0900
1800	1400	1300	1200	1100	1000
1900	1500	1400	1300	1200	1100
2000	1600	1500	1400	1300	1200
2100	1700	1600	1500	1400	1300
2200	1800	1700	1600	1500	1400
2300	1900	1800	1700	1600	1500

Common Error: A common error is to put the wrong date in your logbook! Remember that the day changes at 0000 UTC. [6:00 p.m. Pacific Standard Time on Monday evening is actually 2:00 a.m. UTC the following day, Tuesday!]
To convert local time to UTC: For AST/EDT, add 4 hours. For EST/CDT, add 5 hours. For CST/MDT, add 6 hours. For MST/PDT, add 7 hours. For PST, add 8 hours.

COMMON Q-SIGNALS

Q-signals are three-letter combinations beginning with the letter "Q". They were originally used to facilitate ship-to-shore communications. The Q-signal asks a question when followed by a question mark. For example: QRA? means, "What is the name of your station?" The Q-signal would be followed by information to fill in the blanks. Here are some of the more common Q-signals.

Q-signal	Meaning
QRA	The name of my station is ______.
QRG	Your exact frequency is ______.
QRH	Your frequency varies.
QRI	Your transmission tone is (1: Good, 2: Variable, 3: Bad)
QRJ	Your signals are weak and I cannot receive you.
QRK	I read your signals (1: Bad, 2: Poor, 3: Fair, 4: Good, 5: Excellent)
QRL	I am busy
QRM	I am being interfered with. (Man-made interference.)
QRN	I am experiencing static. (Atmospheric interference.)
QRO	Increase your power
QRP	Decrease your power (or low power)
QRQ	Send faster (_____ WPM.)
QRS	Send slower (_____ WPM.)
QRT	Stop sending
QRU	I have nothing for you
QRV	I am ready
QRW	Tell _____ I am calling on _____ kHz.
QRX	I will call you again at _____ hours. (or Stand by)
QRY	Your turn is number _____.
QRZ	You are being called by _____.
QSA	The strength of your signals is _____. (1: Poor to 5: Very good)
QSB	Your signals are fading.
QSD	Your keying is defective.
QSG	Send _____ messages at a time.
QSK	I can hear you between my signals; break in.
QSL	I am acknowledging receipt.
QSM	Repeat the last message which you sent me.
QSN	I did hear you on _____ kHz.
QSO	I can communicate with _____.
QSP	I will relay to _____.
QST	General call to all amateurs.
QSU	Send a series of V's on this frequency.
QSW	I am going to send on this frequency.
QSX	I am listening to _____ on _____kHz.
QSY	Change to another frequency.
QSZ	Send each word or group twice.
QTA	Cancel message number _____.
QTB	I will repeat the first letter of each word.
QTC	I have _____ messages for you.
QTH	My location is _____.
QTR	The time is _____.
QTV	I will keep my station open until _____.

Copyright © 1993 by Master Publishing, Inc., Richardson, Texas
All Rights Reserved. For reproduction permission and other rights under this copyright write: Master Publishing, Inc., 14 Canyon Creek Village MS 31, Richardson, Texas 75080. ***The Author, Publisher or Seller assume no liability with respect to the use of this information contained herein.***

MORSE CODE ABBREVIATIONS

ABBR.	Meaning
AA	All after (retransmission after question mark)
AB	All before
ABT	About
ADS	Address
AMP	Ampere
ANT	Antenna
ASAP	As soon as possible
AVG	Average
BCNU	Be seeing you
BK	Break
BN	All between
BTR	Better
B4	Before
C	Yes
CFM	Confirm
CK	Check
CL	I am closing
CLD	Called
CLR	Clear
CNT	Cannot
CONDX	Conditions
CPY	Copy
CQ	Calling all stations
CUD	Could
CUAGN	See you again
CUL	See you later
CUM	Come
CUZ	Cause
CW	Continuous Wave
DWN	Down
DLVD	Delivered
DX	Distance
ENUF	Enough
ES	And
ETA	Estimated time of arrival
ETD	Estimated time of departure
FAX	Facsimile
FB	Fine Business, excellent
FD	Field Day
FER	For
FM	From
FREQ	Frequency
FWD	Forward
GA	Go ahead
GB	Good bye
GE	Good evening
GESS	Guess
GG	Going
GM	Good Morning
GN	Good Night
GND	Ground
GV	Give

ABBR.	Meaning
HI	Laughter
HPE	Hope
HR	Hear, here
HV	Have
HW	How
ID	Identification
INFO	Information
IRC	International Reply Coupons
LID	A poor operator
LIL	Little
LTR	Letter
LV	Leave
MILL	Typewriter
MIN	Minute
MILS	Milliamperes
MN	Minute(s)
MSG	Message
N	No
NIL	Nothing
NR	Number, near
NW	Now
OB	Old Boy
OK	It is correct or we agree
OM	Old man
OPN	Operation
OP, OPR	Operator
OT	Old Timer
PKG	Package
PLS, PSE	Please
PTT	Push to talk
PWR	Power
R	Roger, All right
RC	Rag Chew
RCD	Received
RCVR, RX	Receiver
RE	Concerning
REF	Reference to
RIG	Station equipment
RITE	Right
RPT	Repeat
RQ	Request
RST	Readability, Signal Strength, Tone
SASE	Self-addressed stamped envelope
SED	Said
SEZ	Says
SHUD	Should
SIG	Signal, signature
SKED	Schedule
SRI	Sorry
STN	Station
SUM	Some

ABBR.	Meaning
TFC	Traffic
TMW	Tomorrow
TNX	Thanks
TXT	Text
TU	Thank you
TT	That
TX	Transmitter
U	You
UA	Do you agree?
UR	Your
VY	Very
W, WRD	Word(s), watts
WA	Word(s) (retransmission after question mark)
WAT	What
WATSA?	What say?
WB	Word(s) before
WID	With
WL	Will
WAT	What
WL	Will, well
WO	Without
WUD	Would
WX	Weather
XMT	Transmit
XMTR	Transmitter
XTAL	Crystal
XYL	Wife, (ex-young lady)
YL	Young lady
YR	Year
73	Best regards
88	Love and Kisses

OPERATING PROSIGNS

(Overline indicates letters are run together to form one character.)

Prosign	Meaning
$\overline{\text{AR}}$	End of message
$\overline{\text{AS}}$	Wait
$\overline{\text{BT}}$	Break, used to separate thoughts
DE	From
K	Go ahead, invitation to transmit
$\overline{\text{KA}}$	Attention
$\overline{\text{KN}}$	Specific station go ahead
R	Message received O.K.
$\overline{\text{SK}}$	I am through sending but will listen for your final.
$\overline{\text{SN}}$	Understood

QSLs – AN AMATEUR RADIO TRADITION

It was common during the early days of radio for amateur operators to brag about how far they could transmit their signals. The only real proof of a 2-way radio contact was a written verification from the receiving station. These confirmations could be in letter form but usually were a post card. Hams called them QSL cards and used them to adorn their radio shack walls. The ones from the farthest and most unusual places were posted with pride and became treasured trophies.

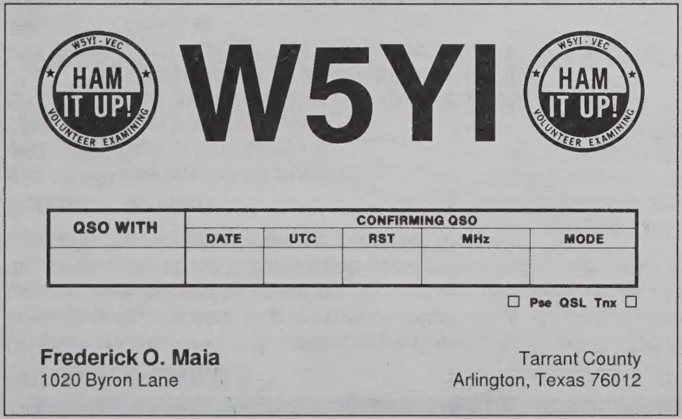
The Q-code was first developed by early Amateur Radio pioneers to speed up the transmission of telegraphy messages. It also allowed amateur operators to quickly transmit commonly used statements and questions with a minimum of characters. The Q-code is a series of three letter combinations with the second letter being R, S or T. QTH became "My location is..." QRA "My name is..." QRX 1 meant "I will call you in a minute" or "Please wait a minute."

QSL means "I am acknowledging receipt." When followed by a question mark, Q-signals represent a question. "QSL?" means "Can you acknowledge receipt? Happy ham operators almost always asked amateur stations they contacted to PSE QSL (rather than QSL?). Thus a "QSL card" became the written confirmation of a radio contact. Over time, ham operators began to confirm most and sometimes all radio communications. QSLing has become the final courtesy of a contact and an Amateur Radio tradition — a ham radio greeting card between friends so to speak.

The use of QSL cards actually predates the days of broadcasting which began in the 1920's. AM broadcasters — especially those using the short waves — adopted the custom as a way of learning how well and where their signals were being received. They too began distributing printed QSLs to listeners who confirmed that they heard their transmissions. Collecting QSLs from shortwave broadcast stations — or DXing — became a major hobby of the SWL — the shortwave listener.

Most amateur operators have post cards printed that contain personalized information regarding their station and location. Space is provided to indicate how well you received the signals of the station contacted. A QSL card normally consists of two parts. The first part, always on the front, indicates your station call sign, operator's name and location. The second part, a report section, indicates how well you received the other station. It may be on the front or the back. There are differing opinions as to which is preferable. Most hams who hang QSLs on the wall prefer the front report version.

The report section contains spaces to enter the call sign of the station contacted, the date and UTC time, the radio frequency or band where the contact was made, and the type (or mode) of transmission. A most important part of the QSL is the signal report of the remote station. Telegraphy signal reports are given using the R-S-T system of signal reporting shown on the inside front cover. Readability is on a scale of one to five; signal strength and tone are reported on a scale of one to nine, A report of 599 is the best. Voice signal reports only contain readability and signal strength. The QSL should indicate if you were portable or mobile during the contact.



W5YI

QSO WITH	CONFIRMING QSO				
	DATE	UTC	RST	MHz	MODE

☐ Pse QSL Tnx ☐

Frederick O. Maia
1020 Byron Lane

Tarrant County
Arlington, Texas 76012

Besides being used as a friendly greeting between ham operators, QSLs are the basis of most certificates presented for operating awards and contests. A QSL becomes the material proof that you contacted a specific station in a specific location on a certain date using a specific mode on a specific frequency. The frequency may be listed in kilohertz, megahertz...or just simply show the band in meters. The mode may be abbreviated as SSB (sideband), FM (frequency modulation), or CW (Morse code).

Each of these elements is important since there are dozens of different operating contests and awards in ham radio. Each requires different information to qualify. DXing, contesting and award hunting are separate hobbies within ham radio. Many ham operators simply collect QSL cards in much the same way that stamp collectors accumulate stamps. He who has the most wins!

UTC Time and Propagation

The time and date of a 2-way QSO are vital items on a QSL card if you want a return QSL. The station you contacted must be able to confirm that the QSO took place. Hams use universal time on their QSL cards. Otherwise known as Greenwich Mean Time (GMT), Coordinated Universal Time (UTC) or "Zulu" (Z) time, this universal time is the same in every part of the earth! QSL cards usually show universal time abbreviated as GMT, UTC or simply "Z" time. Coordinated Universal Time is abbreviated UTC after the French phrase, *Universelle Tempes Coordinate,* rather than CUT. It is the time at longitude zero or the "prime meridian" which passes through, and, becomes, the local time of Greenwich, England — thus, the notation, Greenwich Mean Time, GMT.

The purpose of universal time is to simplify determining when you actually made the radio contact. It would be very difficult if the remote station used their local time on the QSL card. To solve this problem, shortwave broadcasters and amateur stations use universal time.

Depending upon the time zone, eight o'clock in the evening can be two o'clock in the morning the following day in Germany. Time in an United States time zone is further complicated by the fact that the U.S. is on daylight savings time a good portion of the year. To help your determination, refer to the UTC conversion chart listed on the inside front cover of this logbook.

Remember, depending on the U.S. daylight saving or standard time zone you are in, if you start a contact between 4 P.M. and 8 P.M. it will be 0000 UTC *tomorrow.* For example, if you are in the Central Daylight Time Zone at 2100 hours, you and the German station would have a UTC time of 0200. And the date would be the next day from the present day. Remember that you MUST use universal time on your QSL cards if they are to be submitted for an award.

UTC time can be determined easily by tuning your short wave receiver to WWV, the United States time and frequency standard that is broadcast 24 hours a day at 2.5, 5, 10,15 and 25 MHz.

A pulse is transmitted every second with the 59th pulse omitted. Radio station WWV in Ft. Collins, Colorado, and its sister station, WWVH in Kuaui, Hawaii, are operated by the U.S. government's National Institute of Standards and Technology (NIST) in Boulder, Colorado.

WWV signals have additional value to a radio amateur because propagation forecasts are given every 18 minutes past the hour (45 minutes past the hour from WWVH). These forecasts include solar flux, sunspot numbers and the "k" and "A" indices, and help to evaluate the transmission of long range radio waves whose propagation is determined by the state of the ionosphere.

Solar flux is the amount of energy radiated from the sun. Flux readings usually range from about 50 to well over 200. As a general rule, the higher the flux number, the higher the maximum usable frequency (MUF) and the better are your chances of completing long range DX contacts. The sunspot numbers are the number of visible sunspots and sunspot groups. Again, if the number is higher, the better the propagation.

The "A" and "k" indices measure the Earth's geomagnetic activity. Here low numbers are the most desirable. An "A" index of under 10 and "k" of 3 or less is considered ideal. Remember, you want high flux and sunspots and a low "A" and "k" index. WWV/WWVH also forecasts solar activity using a scale from "very low" to "very high" and geomagnetic field conditions as being "quiet", "unsettled" or "active."

QSL Cards and Awards

QSL cards have one thing in common! All contain the call sign of the transmitting station in large print. The call sign is more important than the name of the operator! Many QSL cards also list other data such as the operator's station equipment, transmitter power level and antenna system. Frequently previous call signs, amateur club affiliations, operating awards held, and information needed toward achieving an award are included. This might be the station's county, country, continent, zone or "grid square."

QSLs come in as many different designs as greeting cards. Most cards are straight-forward and post-card size: 3-1/2 by 5-1/2 inches. Some cards are humorous; others may contain a photograph of the operator or his station. Many include a map of the operator's state or country since collecting states or countries count towards ham radio's two most popular trophies: the Worked All States (WAS) and DX Century Club (DXCC) certificates.

Both of these awards are sponsored by the American Radio Relay League (ARRL) and require QSL card verifications proving two-way QSOs with all fifty U.S. states or one hundred countries on the current DXCC list as shown on the inside back cover. The DXCC list is "current" as of this printing, but it constantly changes as countries come and go. Application forms and lists for these three awards are available from the ARRL at 225 Main Street, Newington, CT 06111. A Worked All Continents (WAC) award is for confirming 2-way contacts with all six continents and is sponsored by the International Amateur Radio Union. CQ magazine sponsors the popular Worked All Zones (WAZ) award.

While the fifty U.S. states are certainly well known, the countries on the DXCC list can be quite different from those learned in geography class. For example, bodies of land separating mainland nations are considered different countries for DXCC purposes. Strangely, the states of Alaska and Hawaii join the continental United States to form three DXCC countries. Even the United Nations building in New York is a country! And more than a dozen other U.S. possessions are also so recognized. There are now more than 300 different DXCC countries. Working them all gets you listed on the Honor Roll, a periodic listing in the ARRL's QST journal. All cards have to be forwarded to the ARRL for checking before the DXCC certificate is issued.

There are also several different versions of DXCC including working 100 countries in mixed modes, single mode (such as all CW) and single band. The 5-Band DXCC Award (5BDXCC) is particularly prestigious and requires QSL confirmations of a 2-way contact with 100 different countries in each of the 80-, 40-, 20-, 15- and 10-meter ham bands since January 1, 1969.

No-code Technicians will be interested in learning about the VUCC award! The VHF/UHF Century Club is another ARRL sponsored award for working grid squares after January 1, 1983. A grid square is an area measuring 2 degrees longitude by 1 degree latitude. It takes 100 different grid square QSL card confirmations to achieve either the 6-meter or 2-meter VUCC. Fifty grid square confirmations get you either the 222-MHz or 420-MHz version of VUCC. It only takes twenty-five confirmations to earn VUCC at 1240 Mhz.

The grid square number consists of four characters. The first two are letters, the last two numbers. There is a grid square for every location on earth. The grid square for Dallas, Texas, is EM12. The letters represent the longitude and latitude of a 20° by 10° section. This area is further subdivided into one hundred 2° by 1° tracts which are numbered 00 to 99. For example: Dallas, Texas, is located at 32.47° north latitude, 96.48° west longitude. The letter E is assigned to areas between 30° and 40° north latitude, M between 80° and 100° west longitude. Therefore the first two letters of the grid square is EM. Dallas is in the 12th (2° by 1°) segment of EM. Most QSL printers will be glad to look up your location and print your grid square on your QSL card if you so desire.

Distributing QSLs

The postage required for mailing out QSL cards — especially to foreign countries — can be expensive if you make a lot of DX contacts. The ARRL maintains both incoming and outgoing QSL bureaus that handle cards in bulk. It is a lot slower, but less expensive. The incoming bureau consists of smaller bureaus — one for each call-sign district. Each individual call-sign bureau mails incoming QSL cards to recipients providing you supply them with postage paid self-addressed envelopes. The outgoing bureau allows amateurs to send QSLs in bulk to foreign countries at great savings (less than a penny each) since they are combined with other cards of other amateurs destined for the same country.

Needless to say, your QSL card should be inviting and interesting if you want to get a good response to the QSLs you send out. The number of return QSLs you receive can be increased by including a SASE (self-addressed stamped envelope) with your QSL card. A nice touch is a hand-written personal message to the receiving station.

FREQUENCY CLASSIFICATIONS

Radio waves are the basic unit of wireless communication. By varying the characteristics of a radio wave – frequency, amplitude, or phase – these waves can be made to communicate information of many types, including audio, video and data. Radio waves that carry information are called carriers, and the process of attaching intelligence to a radio wave so that it can be transmitted over the air is called modulation.

Radio waves are distinguished from each other by their frequency or wavelength. Frequency represents the number of cycles (alternations) a radio wave completes in one second. Radio frequency is measured in hertz (Hz), kilohertz (kHz), megahertz (MHz) and gigahertz (GHz). The radio frequency spectrum begins just above the audio range and extends above 30 GHz.

The distance that a cycle of a radio wave occupies in space as it travels gets smaller as its frequency increases. This is the wavelength. At 30 MHz the wavelength is 10 meters. Below 300 MHz, wavelength is measured in meters. Above 300 MHz, wavelengths are measured in centimeters (cm) and millimeters (mm). A centimeter is one hundredth of a meter (m); a millimeter is one-thousandth of a meter.

The radio frequency (RF) spectrum is divided into “bands” that correspond to various groups of radio frequencies. These bands are identified by their frequencies, average wavelengths or by descriptive terms that have been adopted over time. In the United States, the FCC (Federal Communications Commission, an independent agency) oversees the use of the spectrum by the private sector and all State and local government users. The NTIA (National Telecommunications and Information Administration, in the U.S. Dept. of Commerce) manages the spectrum used by the federal government.

The amateur service is indeed very fortunate to have a multitude of allocated frequency bands scattered throughout the radio spectrum. Each yields different radio wave propagation characteristics. Here is the radio frequency spectrum.

Category	Abbrev.	Frequency	Amateur Band Wavelength
Very Low Frequency	VLF	3 to 30 kHz	None
Low Frequency	LF	30 to 300 kHz	None
Medium Frequency	MF	300 to 3000 kHz	160 meters
High Frequency	HF	3 to 30 MHz	80, 40, 30, 20, 17, 15, 12, 10 meters
Very High Frequency	VHF	30 to 300 MHz	6, 2, 1.25 meters
Ultrahigh Frequency	UHF	300 to 3000 MHz	70, 33, 23, 13 centimeters
Superhigh Frequency	SHF	3 to 30 GHz	9, 5, 3, 1.2 centimeters
Extremely High Frequency	EHF	Above 30 GHz	6, 4, 2.5, 2, 1 millimeter

The radio frequency spectrum is a limited – but reusable – resource. It is reusable in the sense that when one person stops using a certain frequency another person can start. Unlike most limited resources, using the radio spectrum does not consume it. Although technological advances continue to expand the range of usable frequencies, the fundamental properties of radio waves make some radio frequencies more useful, and hence more valuable, than others.

EMISSION TYPE DESIGNATORS – AMATEUR RADIO SERVICES

First Symbol – Modulation system

A=Double sideband AM, C=Vestigial sideband AM, D=Amplitude/angle modulated, F=Frequency modulation, G=Phase modulation, H=Single sideband/full carrier, J=Single sideband/suppressed carrier, K=AM pulse, L=Pulse modulated in width/duration, M=Pulse modulated in position/phase, P=Unmodulated pulses, Q=Angle modulated during pulse, V=Combination of pulse emissions, W=Other types of pulses, R=Single sideband/reduced or variable level carrier.

Second Symbol – Nature of signal modulating carrier

0=No modulation, 1=Digital data without modulated subcarrier, 2=Digital data on modulated subcarrier, 3=Analog modulated, 7=Two or more channels of digital data, 8=Two or more channels of analog data, 9=Combination of analog and digital information, X=Other

Third Symbol – Information to be conveyed

A=Manually received telegraphy, B=Automatically received telegraphy, C=Facsimile (FAX), D=Digital information, E=Voice telephony, F=Video/television, N=No information, W=Combination of these, X=Other.

1. **CW** - International Morse code telegraphy emissions having designators with A, C, H, J or R as the first symbol, 1 as the second symbol, A or B as the third symbol.
2. **DATA** - Telemetry, telecommand and computer communications emissions having designators with A, C, D, F, G, H, J or R as the first symbol: 1 as the second symbol; D as the third symbol; and also emission J2D. Only a digital code of a type specifically authorized in the §Part 97.3 rules may be transmitted.
3. **IMAGE** - Facsimile and television emissions having designators with A, C, D, F, G, H, J or R as the first symbol; 1, 2 or 3 as the second symbol; C or F as the third symbol; and also emissions having B as the first symbol; 7, 8 or 9 as the second symbol; W as the third symbol.
4. **MCW (Modulated carrier wave)** - Tone-modulated international Morse code telegraphy emissions having designators with A, C, D, F, G, H or R as the first symbol; 2 as the second symbol; A or B as the third symbol.
5. **PHONE** - Speech and other sound emissions having designators with A, C, D, F, G, H, J or R as the first symbol; 1, 2 or 3 as the second symbol; E as the third symbol. Also speech emissions having B as the first symbol; 7, 8 or 9 as the second symbol; E as the third symbol. MCW for the purpose of performing the station identification procedure, or for providing telegraphy practice interspersed with speech, or incidental tones for the purpose of selective calling, or alerting or to control the level of a demodulated signal may also be considered phone.
6. **PULSE** - Emissions having designators with K, L, M, P, Q, V or W as the first symbol; , 1, 2, 3, 7, 8, 9 or X as the second symbol; A, B, C, D, E, F, N, W or X as the third symbol.
7. **RTTY (Radioteletype)** - Narrow-band, direct-printing telegraphy emissions having designators with A, C, D, F, G, H, J or R as the first symbol; 1 as the second symbol; B as the third symbol; and also emission J2B. Only a digital code of a type specifically authorized in the §Part 97.3 rules may be transmitted.
8. **SS (Spread Spectrum)** - Emissions using bandwidth-expansion modulation emissions having designators with A, C, D, F, G, H, J or R as the first symbol; X as the second symbol; X as the third symbol. Only a SS emission of a type specifically authorized in §Part 97.3 rules may be transmitted.
9. **TEST** - Emissions containing no information having the designators with N as the third symbol. Test does not include pulse emissions with no information or modulation unless pulse emissions are also authorized in the frequency band.

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL	
	TIME ON	TIME OFF						SENT	RCVD.		S	R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL	
	TIME ON	TIME OFF						SENT	RCVD.		S	R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL	
	TIME ON	TIME OFF						SENT	RCVD.		S	R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S/R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL
	TIME ON	TIME OFF						SENT	RCVD.		S / R

DATE	UTC		FREQ.	MODE	PWR.	STATION WORKED	LOCATION (QTH)	SIGNAL REPORT		COMMENTS	QSL	
	TIME ON	TIME OFF						SENT	RCVD.		S	R

RECIPROCAL OPERATING AGREEMENTS

Foreign amateur radio operators of countries that have signed a reciprocal operating agreement with our government may apply to the FCC for a one-year term permit to operate amateur radio while in the United States. This permit gives them full use of all U.S. amateur bands regardless of the type of license held in their own country. Foreign amateurs, except Canada, identify with the U.S. call sign district followed by the word "stroke" (slant bar on CW) and their own call sign. Canadian amateurs identify with the U.S. call sign district after their call sign. American amateurs may also apply to the telecommunications authority of the following countries to operate amateur radio while temporarily travelling abroad.

Country	Call Sign Prefix
[3] Amsterdam & St. Paul Island	FT/z
Antigua and Barbuda	V2
Argentina	LU
[1] Ascension Island	ZD9
Australia	VK
Austria	OE
Bahamas	C6
Barbados	8P
Belgium	ON
Belize	V3
[1] Bermuda Is.	VP9
Bolivia	CP
Botswana	A2
Brazil	PY
[1] British Virgin Islands	VP2/v
[2] Canada	VE, VO, VY
[1] Cayman Is.	ZF
Chile	CE
Colombia	HK
Costa Rica	TI
[3] Crozet	FT8/w
Cyprus	5B
Denmark	OZ
Dominica	J7
Dominican Republic	HI
Ecuador	HC
El Salvador	YS
[1] England	G
[1] Falkland Is.	VP8
Fiji	3D
Finland	OH
[3] France	F
[3] French Guiana	FY
[3] French Polynesia	FO
Germany	DL
[1] Gibraltar	ZB2
Greece	SV
Greenland	OX
Grenada	J3
[3] Guadeloupe	FG
Guatemala	TG
[1] Guernsey	GM
Guyana	8R
Haiti	HH
Honduras	HR
[1] Hong Kong	VS6
Iceland	TF
India	VU
Indonesia	YB
Ireland	EI
[1] Isle of Man	GD
Israel	4X
Italy	I
Jamaica	6Y
Japan	JA
[1] Jersey	GJ
Jordan	JY
Kiribati	T3
Kuwait	9K
[3] Kerguelen Island	FT8/x
Liberia	EL
Luxembourg	LX
[3] Martinique	FM
Mexico	XE
Micronesia	V6
Monaco	3A
[1] Montserrat	VP2M
Netherlands	PA
Netherland Antilles	PJ
[3] New Caledonia	FK
New Zealand	ZL
Nicaragua	YN
[1] Northern Ireland	GI
Norway	LA
Panama	HP
Paraguay	ZP
Papua New Guinea	P2
Peru	OA
Philippines	DU
Portugal	CT
[3] Reunion	FR
[1] St. Helena	ZD7
St. Lucia	J6
[3] St. Pierre & Miquelon	FP
[1] St. Vincent & Grenadines	J8
[1] Scotland	GM
Seychelles	S7
Sierra Leone	9L
Solomon Islands	H4
[1] South Georgia Islands	VP8
[1] South Sandwich Islands	VP8
South Africa	ZS
Spain	EA
Suriname	PZ
Sweden	SM
Switzerland	HB
Thailand	HS
[1] Turks and Caicos Is.	VP5
Trinidad and Tobago	9Y
[1] Tristan Da Cunha Island	ZD9
Tuvalu	T2
United Kingdom	G
Uruguay	CX
[1] Vanuatu	YJ
Venezuela	YV
[1] Wales	GW
[3] Wallis & Futuna Islands	FW
Yugoslavia	YU

[1] Includes all British territories.

[2] No permit is required to operate in Canada.

[3] Includes all French territories.

FOREIGN COUNTRIES PERMITTING THIRD-PARTY TRAFFIC WITH THE UNITED STATES

Article 32 of the *International Radio Regulations* prohibits amateur stations from being used for transmitting international communications on behalf of third parties unless special arrangements have been made between the administrations of the countries involved. A third party is defined as any person other than the two qualified (licensed) operators exchanging the message traffic. Whether this person is present in the amateur station is irrelevant.

The amateur service may not be used as a substitute for any existing means of electrical communications, and amateur operators may not be directly or indirectly compensated for their services. The following countries allow the transmission and receipt of non-commercial personal, emergency and technical messages on behalf of others.

Country	Call Sign Prefix
Antigua and Barbuda	V2
Argentina	LU
Australia	VK
Austria, Vienna	4U1VIC
Belize	V3
Bolivia	CP
Brazil	PY
Canada	VE, VO, VY
Chile	CE
Colombia	HK
Comoros	D6
Costa Rica	TI
Cuba	CO
Dominica	J7
Dominican Republic	HI
Ecuador	HC
El Salvador	YS
The Gambia	C5
Ghana	9G
Grenada	J3
Guatemala	TG
Guyana	8R
Haiti	HH
Honduras	HR
Israel	4X
Jamaica	6Y
Jordan	JY
Liberia	EL
Mexico	XE
Micronesia	V6
Nicaragua	YN
Panama	HP
Paraguay	ZP
Peru	OA
Philippines	DU
St. Christopher & Nevis	V4
St. Lucia	J6
St. Vincent & Grenadines	J8
Sierra Leone	9L
Swaziland	3D6
Switzerland, Geneva	4U1ITU
Trinidad and Tobago	9Y
United Kingdom	GB, except GB3
Uruguay	CX
Venezuela	YV

ITU/ICAO PHONETIC ALPHABET

Adopted by the International Telecommunication Union and International Civil Aviation Organization

	ITU/ICAO	Alternates
A -	Alpha	(Able, Adam)
B -	Bravo	(Baker)
C -	Charlie	(Cocoa)
D -	Delta	(Dog, David)
E -	Echo	(Easy, Edward)
F -	Foxtrot	(Fox, Frank)
G -	Golf	(George, Gulf)
H -	Hotel	(Henry)
I -	India	(Item, Ida, Italy)
J -	Juliette	(Japan, Jig)
K -	Kilo	(King, Kilowatt)
L -	Lima	(Love, Lewis)
M -	Mike	(Mexico, Mary)
N -	November	(Norway, Nancy)
O -	Oscar	(Ocean, Otto)
P -	Papa	(Peter, Pacific)
Q -	Quebec	(Queen)
R -	Romeo	(Roger, Radio)
S -	Sierra	(Sugar, Susan)
T -	Tango	(Thomas, Tokyo)
U -	Uniform	(United, Union)
V -	Victor	(Victory, Victoria)
W -	Whiskey	(Willie, William)
X -	X-Ray	(Xylophone)
Y -	Yankee	(Yoke, Young)
Z -	Zulu	(Zebra, Zed, Zanzibar)

Phonetics in parentheses are sometimes used on the ham bands, especially by older, long-term amateurs, but the ITU/ICAO phonetics are preferable.

U. S. AMATEUR STATION CALL SIGN ASSIGNMENT SYSTEM

As an aid to enforcing the radio laws and regulations, most transmitting stations in the world are required to identify themselves when they are using the radio spectrum. Stations are assigned a combination of letters and numbers which quickly identify the country, radio service and individual station. By international agreement, the prefix letters determine the nation in which the station is authorized to transmit.

A unique call sign is assigned to each U.S. amateur operator by the Federal Communications Commission when their station/operator license is processed. U.S. amateur radio stations are identified by a series of one or two prefix letters, a geographical area numerical designator and one, two or three suffix letters. Ham stations must identify their stations at least once every ten minutes and at the end of the communications exchange.

There are four call sign groupings, A, B, C and D. You may change your call sign to a new group when you upgrade your amateur radio operator license. A ham station is assigned a call from the alphabetized regional group for the licensee's operator class and mailing address. Since ham station call signs are assigned in strict alpha-numeric sequential order, it is frequently possible to determine how long an amateur has been licensed by his call. Many publications list recently issued call signs which can give you an idea what call signs will be issued in the near future. Tables showing the call sign groups and formats for operator/station licenses within and without the contiguous United States follow.

Amateurs are not permitted to request a specific call sign, and once assigned, a call sign is never changed unless the licensee specifically requests the change — even if they move out of the contiguous United States. If a license is not renewed, at present, the FCC has no procedure for re-issuing call signs no longer held by amateurs or for assigning any special call sign for any reason. FCC licensees residing in foreign countries must show a U.S. mailing address on their applications.

A so-called 2-by-3 format call sign has two prefix letters beginning with A, K, N or W, a call sign geographical area designator (1 through 0) plus three sequentially issued suffix letters. Only the "N" by 3 letters will be assigned to Group C. A single K and W prefix by 3 letters will not be assigned. When all call signs have been allocated from a group, call signs from the next lower group are assigned. Amateur stations located outside the contiguous United States have two letter prefixes with L, P or H as the second letter; the first letter is A, K, N or W.

AMATEUR CALL SIGN GROUPS, CONTIGUOUS U.S.A.

Group	Format	Prefix Letters	Issued to
Group D	**2-by-3**	KA to KZ, WA to WZ	**Novice**
Group C	**1-by-3**	N	**Technician/General**
Group B	**2-by-2**	KA to KZ, NA to NZ, WA to WZ	**Advanced Class**
Group A	**1-by-2**	K, N, W	**Extra Class**
	2-by-1	AA to AL, KA to KZ, NA to NZ, WA to WZ	**Extra Class**
	2-by-2	AA to AL	**Extra Class**

AMATEUR CALL SIGN GROUPS, NON-CONTIGUOUS U.S.A.

Region 11 = Alaska
Region 12 = Caribbean Area including Puerto Rico
Region 13 = Pacific Area including Hawaii

Group	Format	Call Sign	Issued to
Group D	**2-by-3**		**Novice Class**
Region 11		Prefix KL or WL, area digit and three letter suffix	
Region 12		Prefix KP or WP, area digit and three letter suffix	
Region 13		Prefix KH or WH, area digit and three letter suffix	
Group C	**2-by-2**		**Technician/General**
Region 11		Prefix KL, NL or WL, area digit and two letter suffix	
Region 12		Prefix NP or WP, area digit and two letter suffix	
Region 13		Prefix KH, NH or WH, area digit and two letter suffix	
Group B	**2-by-2**		**Advanced Class**
Region 11		Prefix AL, area digit and two letter suffix	
Region 12		Prefix KP, area digit and two letter suffix	
Region 13		Prefix AH, area digit and two letter suffix	
Group A	**2-by-1**		**Extra Class**
Region 11		Prefix AL, KL, NL or WL, area digit and one letter suffix	
Region 12		Prefix KP, NP, or WP, area digit and one letter suffix	
Region 13		Prefix AH, KH, NH or WH, area digit and one letter suffix	

CALL SIGNS FOR UPGRADES

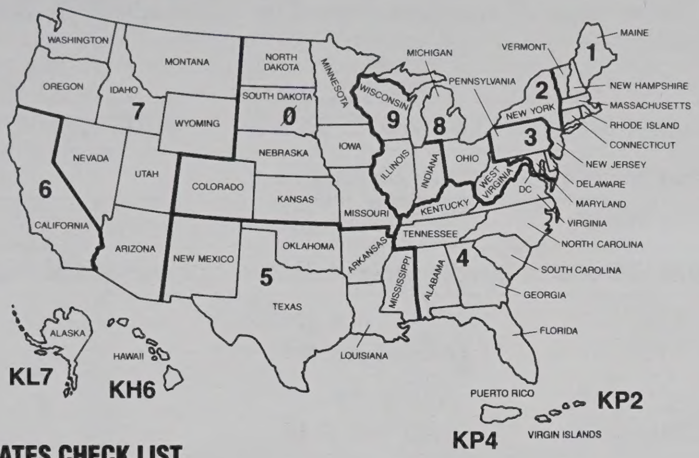
The current automated amateur radio call sign assignment system has been in effect since 1978. It allows amateurs to obtain shorter, and, theoretically, more desirable call signs in exchange for upgrading one's license.

The FCC authorizes amateurs who have already received their first license to immediately begin using their new privileges on the air when they upgrade. You must identify your call sign with a special identifier whenever operating outside the privileges of the license currently in your possession. This notifies those listening (including FCC monitoring stations) that you have recently upgraded and are authorized on a new spectrum. Novices upgrading to Technician should append their call sign with the letters "KT," e.g., KB5AAA would add "temporary KT" to his/her call sign. You would use a slant bar when operating using Morse code. New General Class amateurs append their call signs with "AG", Advanced "AA" and Extra Class "AE."

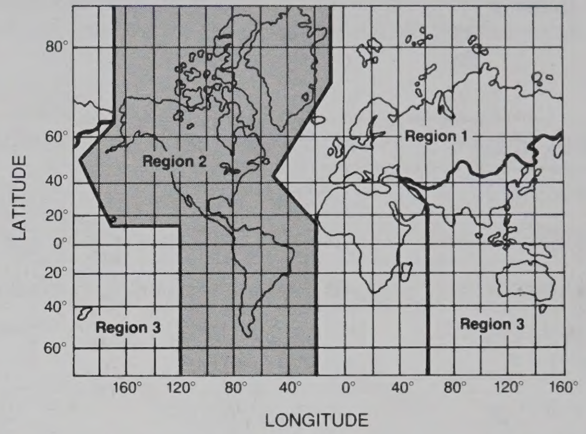
Novices upgrading to Technician may request a Group C (1x3) format. Technician's upgrading to General may request a new Group C call sign, or they will receive a more recent Group C call if they already hold one. Newly upgraded Advanced and Extra Class amateurs may request new Group B and A call sign formats. You may change your call sign to the next available call sign within your present group any time you wish by submitting a Form 610 *Application for Amateur Radio Station/Operator License*. Be sure to check line 2E. Send to the FCC, 1270 Fairfield Road, Gettysburg, PA 17325-7245. Once changed, however, you may not revert back to a previously held call sign.

WORKED ALL STATES, CONTINENTS

U.S. CALL SIGN AREAS



ITU REGIONS



WORKED-ALL-STATES CHECK LIST

STATE	ABBR.	DATE	CALL	BAND (MHz)	MODE
Alabama	AL				
Alaska	AK				
Arizona	AZ				
Arkansas	AR				
California	CA				
Colorado	CO				
Connecticut	CT				
Delaware	DE				
Florida	FL				
Georgia	GA				
Hawaii	HI				
Idaho	ID				
Illinois	IL				
Indiana	IN				
Iowa	IA				
Kansas	KS				
Kentucky	KY				
Louisiana	LA				
Maine	ME				
Maryland*	MD				
Massachusetts	MA				
Michigan	MI				
Minnesota	MN				
Mississippi	MS				
Missouri	MO				
Montana	MT				
Nebraska	NE				
Nevada	NV				
New Hampshire	NH				
New Jersey	NJ				
New Mexico	NM				
New York	NY				
North Carolina	NC				
North Dakota	ND				
Ohio	OH				
Oklahoma	OK				
Oregon	OR				
Pennsylvania	PA				
Rhode Island	RI				
South Carolina	SC				
South Dakota	SD				
Tennessee	TN				
Texas	TX				
Utah	UT				
Vermont	VT				
Virginia	VA				
Washington	WA				
West Virginia	WV				
Wisconsin	WI				
Wyoming	WY				

(Note: * The District of Columbia may be counted as Maryland.)

WORKED-ALL-CONTINENTS CHECK LIST

CONTINENT	DATE	CALL	BAND (MHz)	MODE
Africa				
Asia				
Europe				
North America				
Oceania				
South America				

Both of these awards are available from the American Radio Relay League and require submission of QSL card confirmations. WAS contacts must be made from one location and may take place on any amateur band and over any period of time. Communications through repeater stations or with ships or aircraft are not permitted. WAC is sponsored by the International Amateur Radio Union and requires ARRL membership. Complete rules and application forms are available from the ARRL, 225 Main St., Newington, CT 06111.

AUTHORIZED FREQUENCY BANDS – AMATEUR SERVICE

(for U.S. Amateur Stations operating from ITU-Region 2 – North and South America)

Meters	Novice	Technician[1, 2]	Technician Plus[2]	General	Advanced	Extra Class
160				1800-2000 kHz/All	1800-2000 kHz/All	1800-2000 kHz/All
80	3675-3725 kHz/CW		3675-3725 kHz/CW	3525-3750 kHz/CW 3850-4000 kHz/Ph	3525-3750 kHz/CW 3775-4000 kHz/Ph	3500-4000 kHz/CW 3750-4000 kHz/Ph
40	7100-7150 KHz/CW		7100-7150 kHz/CW	7025-7150 kHz/CW 7225-7300 kHz/Ph	7025-7300 kHz/CW 7150-7300 kHz/Ph	7000-7300 kHz/CW 7150-7300 kHz/Ph
30				10.1-10.15 MHz/CW	10.1-10.15 MHz/CW	10.1-10.15 MHz/CW
20				14.025-14.15 MHz/CW 14.225-14.35 MHz/Ph	14.025-14.15 MHz/CW 14.175-14.35 MHz/Ph	14.0-14.35 MHz/CW 14.15-14.35 MHz/Ph
17				18.068-18.11 MHz/CW 18.11-18.168 MHz/Ph	18.068-18.11 MHz/CW 18.11-18.168 MHz/Ph	18.068-18.11 MHz/CW 18.11-18.168 MHz/Ph
15	21.1-21.2 MHz/CW		21.1-21.2 MHz/CW	21.025-21.2 MHz/CW 21.3-21.45 MHz/Ph	21.025-21.2 MHz/CW 21.225-21.45 MHz/Ph	21.0-21.45 MHz/CW 21.2-21.45 MHz/Ph
12				24.89-24.99 MHz/CW 24.93-24.99 MHz/Ph	24.89-24.99 MHz/CW 24.93-24.99 MHz/Ph	24.89-24.99 MHz/CW 24.93-24.99 MHz/Ph
10	28.1-28.5 MHz/CW 28.3-28.5 MHz/Ph		28.1-28.5 MHz/CW 28.3-28.5 MHz/Ph	28.0-29.7 MHz/CW 28.3-29.7 MHz/Ph	28.0-29.7 MHz/CW 28.3-29.7 MHz/Ph	28.0-29.7 MHz/CW 28.3-29.7 MHz/Ph
6		50-54 MHz/CW 50.1-54 MHz/Ph	50-54 MHz/CW 50.1-54 MHz/Ph	50-54 MHz/CW 50.1-54 MHz/Ph	50-54 MHz/CW 50.1-54 MHz/Ph	50-54 MHz/CW 50.1-54 MHz/Ph
2		144-148 MHz/CW 144.1-148 MHz/All	144-148 MHz/CW 144.1-148 MHz/All	144-148 MHz/CW 144.1-148 MHz/Ph	144-148 MHz/CW 144.1-148 MHz/All	144-148 MHz/CW 144.1-148 MHz/All
1.25	222.1-223.91 MHz/All	222-225 MHz/All	222-225 MHz/All	222-225 MHz/All	222-225 MHz/All	222-225 MHz/All
0.70		420-450 MHz/All	420-450 MHz/All	420-450 MHz/All	420-450 MHz/All	420-450 MHz/All
0.35		902-928 MHz/All	902-928 MHz/All	902-928 MHz/All	902-928 MHz/All	902-928 MHz/All
0.23	1270-1295 MHz/All	1240-1300 MHz/All	1240-1300 MHz/All	1240-1300 MHz/All	1240-1300 MHz/All	1240-1300 MHz/All

[1] No-Code License

[2] Effective 2/14/91

Note: Morse code (CW, A1A) may be used on any frequency allocated to the amateur service. Telephony emission (abbreviated Ph above) authorized on certain bands as indicated. Higher class licensees may use slow-scan television and facsimile emissions on the Phone bands; radio teletype/digital on the CW bands. All amateur modes and emissions are authorized above 144.1 MHz. In actual practice, the modes/emissions used are somewhat more complicated than shown above due to the existence of various band plans and "gentlemen's agreements" concerning where certain operations should take place.

DX CENTURY CLUB – WORKED ALL ZONES

The two most prestigious operating awards in Amateur Radio are DXCC and WAZ. The DX Century Club is a certificate and not a club at all. You must have confirmed contacts with 100 or more countries or 40 geographic zones to qualify and there are different versions of both awards. DXCC is sponsored by the American Radio Relay League, WAZ by CQ Magazine. The DXCC countries constantly change while the 40 zones do not. The DXCC countries are determined by specific criteria which do not necessarily match the geographic countries as we know them. The DXCC rules and footnotes are very lengthy and involved and we suggest you contact the ARRL, 225 Main St., Newington, CT 06111 for their current guidelines. The Worked All Zones DX award is harder to achieve since WAZ requires you to work stations where there are no DXCC countries. Zone maps and WAZ applications are available from CQ Magazine, 76 N. Broadway, Hicksville, NY 11801.

ARRL DXCC COUNTRIES – CQ ZONES

Country	Zone	Prefix
Sov. Mil. Order of Malta	15	1A0
Spratly Island	26	1S
Monaco	14	3A
Agalega & St. Brandon Islands	39	3B6, 7
Mauritius	39	3B8
Rodriguez Island	39	3B9
Equatorial Guinea	36	3C
Pagalu	36	3C0
Fiji	32	3D2
Conway Reef	32	3D2/c
Rotuma Island	32	3D2/r
Swaziland	38	3DA
Tunisia	33	3V
Vietnam	26	3W, XV
Republic of Guinea	35	3X
Bouvet	38	3Y
Peter I. Island	12	3Y/p
Malyj Vysotskij Island	16	4J
Franz Joseph Land	40	4K2, UA1
Sri Lanka	22	4P-4S
ITU, Geneva, Switzerland	14	4U1/i
United Nations HQ. New York	5	4U1/u
Israel	20	4X, 4Z
Libya	34	5A
Cyprus	20	5B
Tanzania	37	5H, 5I
Nigeria	35	5N, 5O
Madagascar	39	5R, 5S
Mauritania	35	5T
Niger	35	5U
Togo	35	5V
Western Samoa	32	5W
Uganda	37	5X
Kenya	37	5Y-5Z
Senegal	35	6V-6W
Jamaica	8	6Y
Yemen	21	7O, 4W
Lesotho	38	7P
Malawi	37	7Q
Algeria	33	7T-7Y
Barbados	8	8P
Maldive Islands	22	8Q
Guyana	9	8R
Croatia	15	9A
Ghana	35	9G
Malta	15	9H
Zambia	36	9I-9J
Kuwait	21	9K
Sierra Leone	35	9L
Malaysia	28	9M2, 4
Eastern Malaysia	28	9M6, 8
Nepal	22	9N
Zaire	36	9Q-9T
Burundi	36	9U
Singapore	28	9V
Rwanda	36	9X
Trinidad & Tobago	9	9Y, 9Z
Abu Ail Islands	21	A1
Botswana	38	A2
Tonga	32	A3
Oman	21	A4
Bhutan	22	A5
United Arab Emirates	21	A6
Qatar	21	A7
Bahrain	21	A9
Pakistan	21	AP-AS
Taiwan	24	BV
China	24	BY, BT
Nauru	31	C2
Andorra	14	C3
The Gambia	35	C5
Bahamas	8	C6
Mozambique	37	C8, 9
Chile	12	CA-CE
San Felix Is.	12	CE0X
Easter Island	12	CE0Y
Juan Fernandez	12	CE0Z
Cuba	8	CM, CO
Morocco	33	CN
Bolivia	10	CP
Portugal	14	CT
Madeira Island	33	CT3
Azores	14	CU
Uruguay	13	CV-CX
St Paul Island	5	CY9
Sable Island	5	CY0
Angola	36	D2, 3
Cape Verde	35	D4
Comoros	39	D6
Germany	14	DA-DL, Y2-Y9
Philippines	27	DU-DZ
Spain	14	EA-EH
Balearic Islands	14	EA6-EH6
Canary Islands	33	EA8-EH8
Ceuta and Melilla	33	EA9-EH9
Ireland	14	EI-EJ
Liberia	35	EL
Iran	21	EP-EQ
Estonia	15	ES
Ethiopia	37	ET
France	14	F
Guadeloupe	8	FG
Mayotte	39	FH
Saint Martin	8	FJ, FS
New Caledonia	32	FK
Martinique	8	FM
French Polynesia	32	FO
Clipperton Island	7	FO/c
Saint Pierre & Miquelon	5	FP
Reunion	39	FR
Glorioso Island	39	FR/g
Juan de Nova, Europa	39	FR/j, E
Tromelin	39	FR/t
Crozet Island	39	FT8/w
Kerguelen Islands	39	FT8/x
Amsterdam & St. Paul Islands	39	FT8/z
Wallis & Futuna Isl.	32	FW
French Guiana	9	FY
England	14	G, GX
Isle of Man	14	GD, GT
Northern Ireland	14	GI, GN
Jersey	14	GJ, GH
Scotland	14	GM, GS
Guernsey	14	GU, GP
Wales	14	GW, GC
Solomon Islands	28	H4
Hungary	15	HA, HG
Switzerland	14	HB
Liechtenstein	14	HB0
Ecuador	10	HC-HD
Galapagos Islands	10	HC8-HD8
Haiti	8	HH
Dominican Republic	8	HI
Colombia	9	HJ-HK
San Andres & Providencia	7	HK0/a
Malpelo Island	7	HK0/m
South Korea	25	HL
Panama	7	HO-HP
Honduras	7	HQ-HR
Thailand	26	HS
Vatican City	15	HV
Saudi Arabia	21	HZ
Italy	15	I
Sardinia	15	IS0, IM0
Djibouti	37	J2
Grenada	8	J3
Guinea-Bissau	35	J5
St. Lucia	8	J6
Dominica	8	J7
St. Vincent	8	J8
Japan	25	JA-JS
Minami Torishima	27	JD1/m
Ogasawara	27	JD1/o
Mongolia	23	JT-JV
Svalbard	40	JW
Jan Mayen	40	JX
Jordan	20	JY
Antarctica	13	KC4
Belau	27	KC6
Guantanamo Bay	8	KG4
Baker & Howland Island	31	KH1
Guam	27	KH2
Johnston Island	31	KH3
Midway Island	31	KH4
Kingman Reef	31	KH5/k
Palmyra & Jarvis Island	31	KH5/p
Hawaii	31	KH6
Kure Island	31	KH7
American Samoa	32	KH8
Wake Island	31	KH9
Mariana Islands	27	KH0
Alaska	1	KL7
Navassa Island	8	KP1
Virgin Islands	8	KP2
Puerto Rico	8	KP4
Desecheo Island	8	KP5
Norway	14	LA-LN
Argentina	13	LO-LW
Luxembourg	14	LX
Lithuania	15	LY, UP
Bulgaria	20	LZ
Peru	10	OA-OC
Lebanon	20	OD
Austria	15	OE
Finland	15	OF-OI
Aland Island	15	OH0
Market Reef	15	OJ0
Czechoslovakia	15	OK-OM
Belgium	14	ON-OT
Greenland	40	OX
Faroes Islands	14	OY
Denmark	14	OZ
Papua New Guinea	28	P2
Aruba	9	P4
Netherlands	14	PA-PI
Sint Maarten	8	PJ5-8
Netherlands Antilles	9	PJ9
Brazil	11	PP-PY
Fernando de Noronha	11	PY0/f
St. Peter & Paul Island	11	PY0/s
Trindade & Martim Vaz Islands	11	PY0/t
Surinam	9	PZ
Western Sahara	33	S0
Bangladesh	22	S2
Slovenia	15	S5
Seychelles	39	S7
Sao Tome & Principe	36	S9
Sweden	14	SA-SM
Poland	15	SN-SR
Sudan	34	ST
Southern Sudan	34	ST0
Egypt	34	SU
Greece	20	SV-SZ
Dodecanese (Rhodes)	20	SV5
Crete	20	SV9
Mt. Athos	20	SY, SV/a
Tuvalu	31	T2
Western Kiribati	31	T30
Central Kiribati	31	T31
Eastern Kiribati	31	T32
Banaba Island	31	T33
Somalia	37	T5
San Marino	15	T7
Turkey	20	TA-TC
Iceland	40	TF
Guatemala	7	TG, TD
Costa Rica	7	TI, TE
Cocos Island	7	TI9
Cameroon	36	TJ
Corsica	15	TK
Central African Republic	36	TL
Congo	36	TN
Gabon	36	TR
Chad	36	TT
Ivory Coast	35	TU
Benin	35	TY
Mali	35	TZ
European Russia	16	UA1, 3, 4, 6
Kaliningradsk	15	UA2
Asiatic Russia	17	UA8, 0
Ukraine	16	UB, UT, UY
Belarus	16	UC
Azerbaijan	21	UD
Georgia	21	UF
Armenia	21	UG
Turkmenistan	17	UH
Uzbekistan	17	UI
Tajikistan	17	UJ
Kazakhstan	17	UL
Kyrgyzstan	17	UM
Moldava	16	UO
Antigua & Barbuda	8	V2
Belize	7	V3
Saint Kitts	8	V4
Namibia	38	V5
Micronesia	27	V6
Marshall Islands	31	V7
Brunei	28	V8
Canada	5	VE, VO, VY
Australia	30	VK
Lord Howe Island	30	VK9/l
Mellish Reef	30	VK9/m
Norfolk Island	32	VK9/n
Christmas Island	29	VK9/x
Cocos-Keeling Islands	29	VK9/y
Willis Island	30	VK9/w
Heard Island	39	VK0/h
Macquarie Island	30	VK0/m
Anguilla	8	VP2E
Montserrat	8	VP2M
British Virgin Islands	8	VP2V
Turks & Caicos Islands	8	VP5
Falkland Islands	13	VP8
South Georgia Island	13	VP8, LU
South Orkney Islands	13	VP8, LU
South Sandwich Islands	13	VP8, LU
South Shetland Islands	13	VP8, LU, CE9, HF0, 4K1
Bermuda	5	VP9
Chagos Islands	39	VQ9
Pitcairn Island	32	VR6
Hong Kong	24	VS6
India	22	VU
Andaman Island	22	VU/a
Laccadive Islands	22	VU/l
United States	5	W, AA-AK, N, K
Mexico	6	XA-XI
Revilla Gigedo	6	XA4-XI4
Burkina Faso	35	XT
Kampuchea (Cambodia)	26	XU
Laos	26	XW
Macao	24	XX9
Myanmar (Burma)	26	XY-XZ
Afghanistan	21	YA
Indonesia	28	YB-YH
Iraq	21	YI
Vanuatu	32	YJ
Syria	20	YK
Latvia	15	YL, UQ
Nicaragua	7	YN
Romania	20	YO-YR
El Salvador	7	YS
Yugoslavia	15	YU
Bosnia-Herzegovina	15	YU4
Macedonia	15	YU5
Venezuela	9	YV-YY
Aves Island	8	YV0
Zimbabwe	38	Z2
Albania	15	ZA
Gibraltar	14	ZB
Cyprus (British bases)	20	ZC4
Saint Helena	36	ZD7
Ascension Island	36	ZD8
Tristan de Cunha	38	ZD9
Cayman Islands	8	ZF
South Cook Islands	32	ZK1/s
North Cook Islands	32	ZK1/n
Niue	32	ZK2
Tokelaus	31	ZK3
New Zealand	32	ZL-ZM
Chatham	32	ZL7
Kermadec	32	ZL8
Auckland & Campbell Islands	32	ZL9
Paraguay	11	ZP
South Africa	38	ZR-ZU
Penguin Island	38	ZS1/p
Walvis Bay	38	ZS9

Radio Amateur

LOGBOOK

Record Station Operation

Although no longer required by the FCC rules, most ham operators keep a detailed accurate history of their station's operation. A logbook becomes your diary of on-the-air activities...and a pleasant reminder of memorable QSOs. It is especially invaluable as a QSLing aid and tool to track your progress toward achieving various DX and operating awards.

Reference Section

The *Radio Amateur Logbook* is more than just a chronicle of station activity. It is an important source of up-to-date frequently needed ham radio information, arranged in an easy-to-understand — easy-to-use format. This material is presented as follows:

Inside Front Cover

- How to Use Your Station Logbook
- RST Signal Reporting System
- UTC Time Conversion Charts

Inside Back Cover

- DXCC Countries and CQ Zones

Front Reference Pages

- Common Q-Signals
- Morse Code (CW) Abbreviations
- Operating Prosigns
- QSLs and QSL Cards
- Frequency Classifications
- Emission Type Designators

Back Reference Pages

- Reciprocal Operating Agreements
- Third-Party Traffic Countries
- Phonetic Alphabet
- Overview of Call Sign Assignments
- U.S. Call Sign Map
- ITU Worldwide Regions
- Worked-All-States Check List
- Worked-All-Continents Check List
- Amateur Service — Authorized Frequencies

Organized Record Keeping

With the *Radio Amateur Logbook,* maintaining a journal of your station operation is easy and convenient. The log sheets are particularly arranged to respond to the needs of amateur operators making worldwide contacts and exchanging QSLs.

Maintaining a station log is an Amateur Radio tradition.

DISTRIBUTED BY:
HAM IT UP!
THE W5YI GROUP, INC., DALLAS, TX

PRINTED IN THE U.S.A.
80 PAGES

The W5YI Group, Inc. • P.O. Box 565101 • Dallas, Texas 75356 • Tel. 817/461-6443